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EXAMINER	
OREILLY, PATRICK F	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

HH

Office Action Summary	Application No.	Applicant(s)	
	10/526,756	NILSSON, AGNE	
	Examiner	Art Unit	
	Patrick F. O'Reilly III	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6-16,18,19 and 21-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-10,12-16,18,19 and 21-24* is/are rejected.

7)☒ Claim(s) *11 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 June 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *See Continuation Sheet*.

Continuation of Attachment(s) 6). Other: English translation for DE 28 51 046 A1 (machine-generated).

DETAILED ACTION

1. This action is in response to applicant's amendment mailed on June 1, 2007.

Specification

2. The amended abstract of the disclosure is objected to because of the following informalities: (a) in line 1 of the amended abstract, a period should be added after the word "room" and (b) in line 9 of the amended abstract, the word "is" should not have been deleted.

Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities:

On page 8 of the amendments to the specification, in line 2 of the replacement paragraph for the 4th paragraph on page 4 of the original disclosure, the word "percent" was added and, consequently, should have been underlined.

Appropriate correction is required.

Claim Objections

4. Claim 15 is objected to because of the following informality: the recited dependence on claim 4 is improper. The amendment, dated June 1, 2007, has cancelled claim 4. For the purpose of an examination on the merits, claim 15 has been treated as to depend on claim 3, rather than claim 4. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 16 and 18-19** are rejected under 35 U.S.C. 102(b) as being anticipated by Nillson (US 4,781,108). The specification and the drawings in the Nillson reference disclose all of the elements recited in **claims 16 and 18-19** of this application.

7. Specifically, in regard to claim 16, the Nillson reference discloses all of the claimed elements, including: at least one main diffuser (secondary air supply members 12 and 13) and at least one slot diffuser (central supply member/carry beam 10) arranged such that a first airflow through the slot diffuser (10) having a first velocity co-ejects a second airflow through the at least one main diffuser (12, 13) having a second velocity lower than said first velocity (the air supplied by the secondary air supply members 12 and 13 has a lower flow velocity than air discharged by the slits 11 in the carry beam 10 such that the carry beam slits 11 will eject the air delivered by the secondary supply members 12 and 13), wherein a combined airflow, being the result of said first and second airflow, assumes the direction of the airflow through the slot diffuser (as shown in Figs. 2 and 4), and wherein the unit (air supply means 7) comprises a slot diffuser unit (central supply member/carry beam 10) having two slots (two longitudinal slits 11 as depicted in Fig. 4) with an acute angle (GAMMA) between depth axes of said two slots (as shown in Fig. 2, the depth axes of the slits 11 are parallel to one another and consequently, the depth axes of slits 11 have an acute angle of zero between them) and wherein the at least two slots (11) of the slot diffuser (10) are arranged proximate to each other (as shown in Fig. 4, the two slits 11 are arranged in close proximity to one another), and two main diffusers (12, 13) are provided and are arranged with the two main diffusers (12, 13) separately and opposingly disposed at two sides of the proximately arranged slot diffusers (secondary supply member 12 is

arranged beneath, and adjacent to, the central supply member 10 and secondary supply member 13 is arranged adjacent to, and on the left side of the central supply member 10). Refer to Nillson, Figures 1-2 and 4; column 2, lines 16-68; and column 4, lines 20-51. The recitation to a "portable air conditioning unit" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Therefore, because all of the elements in claim 16 of this application are disclosed by the Nillson reference, this claim is rejected in accordance with 35 U.S.C. 102(b).

8. In regard to claim 18, Nillson further discloses that the slot diffuser (central supply member/carry beam 10) is arranged in a meeting corner of said main diffusers (secondary air supply members 12 and 13). See Nillson, Figures 1-3 and column 4, lines 20-22 and 42-45. Thus, Nillson meets the language of this claim.

9. In regard to claim 19, Nillson further discloses that the angle between two main diffusers (12 and 13) is between 80 and 110 degrees (two secondary air supply members 12 and 13 form a mutual angle of about 90° with respect to one another, an angle of 90° is encompassed by the range of 80° to 110°). Refer to Nillson, Figure 2 and column 3, lines 25-32.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 1-3, 6-7, and 23-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nillson (US 4,781,108) in view of Hirsch (DE 28 51 046 A1). These two references, when considered together, teach all of the elements recited in **claims 1-3, 6-7, and 23-24** of this application, except for several obvious optimized design parameters and obvious design choices.

12. In particular, claim 1 of this application is obvious when Nillson is viewed in light of Hirsch. Nillson discloses the invention substantially as claimed, including: at least one air supply unit (air supply means 7) and one air exhaust unit (outlet 5 for output air from the room), wherein said air supply unit (7) comprises a guiding slot diffuser (central supply member/carry beam 10) for guiding an airstream in a certain direction, such that a patient (Fig. 2), lying down in said bed (1) on his back, receives said airstream, and said exhaust unit (5) is arranged near the floor (Fig. 2) and near a head end of the bed such that air is arranged to leave the room after having ventilated the patient (as shown in Fig. 2, air is discharged from the room via outlet 5 after ventilating the patient zone), said air supply unit (7) also comprises an air outlet (secondary air supply members 12, 13) devised to supply air at a lower velocity than the air passing through the guiding slot diffuser (10), and said system also comprises at least one main diffuser (secondary air supply members 12, 13) comprising perforated sheet and arranged such that a first airflow through the slot diffuser (10) having a first velocity is co-ejected with a second airflow having a second velocity through the main diffuser (12, 13), said second velocity being lower than said first velocity (the air supplied by the secondary air supply members 12 and 13 has a lower flow velocity than air discharged by the slits 11 in the carry beam 10 such that the carry

beam slits 11 will eject the air delivered by the secondary supply members 12 and 13), such that the combined flow assumes substantially the direction of the first flow (as shown in Figs. 2 and 4), and the slot diffuser (10) is provided with at least two slots (two longitudinal slits 11 as depicted in Fig. 4), and an angle between depth axes of two of said slots is acute (as best shown in Fig. 2, the depth axes of the slits 11 are parallel to one another and consequently, the depth axes of slits 11 have an acute angle of zero between them), and wherein the at least two slots (11) of the slot diffuser (10) are arranged proximate to each other (as shown in Figs. 2 and 4, the two slits 11 are arranged in close proximity to one another), and two main diffusers (12, 13) are provided and are arranged with the two main diffusers (12, 13) separately and opposingly disposed at two sides of the proximately arranged slot diffusers (secondary supply member 12 is arranged beneath, and adjacent to, the central supply member 10 and secondary supply member 13 is arranged adjacent to, and on the left side of the central supply member 10). Refer to Nillson, Figures 1-2 and 4; column 2, lines 16-68; and column 4, lines 7-51.

However, claim 1 of this application further discloses that the air outlet of the supply unit is devised to supply a larger volume of air than the guiding slot diffuser, the longitudinal direction of at least one slot in the guiding slot diffuser is lying in a plane which is parallel to a vertical plane parallel with a left or right side of the bed in which the patient is lying, and the guiding slot diffuser is provided with a booster fan for driving air through the guiding slot diffuser. Nillson does not contain these additional limitations.

Hirsch, although, teaches an air discharge device, for direction control in an air-conditioning system, that includes an outlet grid (3) for supplying primary air and a jet (7) positioned in the center of the grid (3) for supplying high pressure secondary air, wherein the jet

(7) is provided with a booster fan (10) for the purpose of allowing the volume and pressure of the secondary air to be controlled independently of the primary air, and wherein the jet (7) supplies a smaller volume of air than the outlet grid (3) for the purpose of minimizing the volume of secondary air so as to conserve energy when only a small amount of the high pressure air is required to achieve the induction effect. See Hirsch, Figure 1 and previously provided English abstract from DERWENT; also see attached English translation for Hirsch, page 2, paragraphs 6-8. Therefore, when Nillson is viewed in light of Hirsch, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson by providing the guiding slot diffuser with a booster fan, as taught by Hirsch, in order to allow the volume and pressure of the secondary air to be controlled independently of the primary air, and further modifying the system of Nillson by supplying a smaller volume of air through the guiding slot than the two main diffuser, as also taught by Hirsch, in order to minimize the volume of secondary air so as to conserve energy when only a small amount of the high pressure air is required to achieve the induction effect.

Nillson, as modified by Hirsch, does not disclose expressly that the longitudinal direction of at least one slot in the guiding slot diffuser is lying in a plane which is parallel to a vertical plane parallel with a left or right side of the bed in which the patient is lying. Although, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to orient the elongated slots in a direction that is parallel to the head-to-foot direction of the bed in order to adequately ventilate a patient lying in the bed because the applicant has not disclosed that this particular orientation of the elongated slots provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in

the art, furthermore, would have expected the applicant's invention to perform equally well with the longitudinal direction of the slots oriented parallel to the transverse direction of the bed as disclosed by Nillson because this slot orientation is also capable of adequately ventilating a patient while lying in the bed. See Nillson, Figures 2 and 4.

13. In regard to claim 2, Nillson further discloses that the guiding slot diffuser (central supply member/carry beam 10) is provided with two slots (two longitudinal slits 11 as depicted in Fig. 4). Refer to Nillson, Figure 4. Therefore, Nillson in view of Hirsch also meets the language of this claim.

14. Moreover, claim 3 of this application also is obvious when Nillson is viewed in light of Hirsch. Nillson discloses the invention substantially as claimed, including: a guiding slot diffuser (central supply member/carry beam 10) for guiding an airstream in a certain direction, said diffuser (10) having two slots (two longitudinal slits 11 as depicted in Fig. 4), and one area of perforated sheet (secondary air supply members 12, 13), being arranged at an outlet side of said diffuser (10), where the area of perforated sheet (12, 13) is arranged in close proximity of the slots (11) such that an airstream of air passing through both of the perforated sheet (12, 13) and the diffuser slots (11) assumes a direction as controlled by the direction of the diffuser slots (as shown in Figs. 2 and 4), and the diffuser slots (11) form an angle (α) to a base plane of said supply unit such that air is guided obliquely down towards the patient (central supply member (10) forms a 45° angle with the horizontal plane such that air from longitudinal air slits 11 is directed obliquely down towards a patient), and wherein the at least two slots (11) of the slot diffuser (10) are arranged proximate to each other (as shown in Figs. 2 and 4, the two slits 11 are arranged in close proximity to one another), and two main diffusers (12, 13) are provided and are

arranged with the two main diffusers (12, 13) separately and opposingly disposed at two sides of the proximately arranged slot diffusers (secondary supply member 12 is arranged beneath, and adjacent to, the central supply member 10 and secondary supply member 13 is arranged adjacent to, and on the left side of the central supply member 10). Refer to Nillson, Figures 1-2 and 4; column 2, lines 16-68; and column 4, lines 20-51.

However, claim 3 of this application further discloses that the guiding slot diffuser is provided with a booster fan for forcing air through the guiding slot diffuser. Nillson does not contain this additional limitation.

Hirsch, although, teaches an air discharge device, for direction control in an air-conditioning system, that includes an outlet grid (3) for supplying primary air and a jet (7) positioned in the center of the grid (3) for supplying high pressure secondary air, wherein the jet (7) is provided with a booster fan (10) for the purpose of allowing the volume and pressure of the secondary air to be controlled independently of the primary air. See Hirsch, Figure 1 and previously provided English abstract from DERWENT; also see attached English translation for Hirsch, page 2, paragraphs 6-8. Therefore, when Nillson is viewed in light of Hirsch, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson by providing the guiding slot diffuser with a booster fan, as taught by Hirsch, in order to allow the volume and pressure of the secondary air to be controlled independently of the primary air.

15. In regard to claim 6, Nillson further discloses an air supply unit (air supply means 7) wherein the base plane (below reference character 13 in Fig. 2) is arranged horizontal and

parallel to the ceiling of the room. Refer to Nillson, Figure 2. Therefore, Nillson in view of Hirsch also meets the language of this claim.

16. In regard to claim 7, Nillson further discloses a central supply member (10) with longitudinal slits (11), which may form angles (α) with the horizontal in the range of about 10° to 80°. Refer to Nillson, column 4, lines 20-38. Consequently, Nillson in view of Hirsch also teaches the language of claim 7.

16. Furthermore, claim 23 of this application also is obvious when Nillson is viewed in light of Hirsch. Nillson discloses the invention substantially as claimed, including: providing a first, relatively fast flow of air, relatively small in volume (central supply member/carry beam 10 having longitudinal slits 11 discharge a relatively small amount of air at a relatively high velocity); providing a second, relatively slow flow of air (secondary air supply members 12, 13 discharge air at a relatively low velocity as compared to the central supply member 10), and adjacent to the first flow of air such that said first flow of air co-ejects air from the second flow (the air supplied by the carry beam slits 11 ejects air from the secondary supply members 12 and 13); and providing a low speed large volume suction for evacuating the supplied air (outlet 5 with filter 6 extracts the large, combined volume of air discharged by both the central supply member 10 and the secondary air supply members 12, 13 from the room at a low velocity so as to ensure a laminar flow pattern through the space and a low velocity across the filter) and providing the first flow of air by forcing air through two elongated slots (central supply member/carry beam 10 has two longitudinal slits 11 as depicted in Fig. 4). Refer to Nillson, Figures 1-2 and 4; column 2, lines 16-68; and column 4, lines 7-51.

However, claim 23 of this application further discloses that the second, relatively slow flow of air is relatively large in volume and that the two elongated slots having converging axes of depth. Nillson does not contain these additional limitations.

Hirsch, although, teaches an air discharge device, for direction control in an air-conditioning system, that includes an outlet grid (3) for supplying primary air and a jet (7) positioned in the center of the grid (3) for supplying high pressure secondary air, wherein the outlet grid (3) supplies a relatively large volume of air as compared to the jet (7) for the purpose of providing a volume that is adequate to condition the space being served (e.g., to maintain a certain minimum air change rate in the space). See Hirsch, Figure 1 and previously provided English abstract from DERWENT; also see attached English translation for Hirsch, page 2, paragraphs 6-8. Therefore, when Nillson is viewed in light of Hirsch, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson by supplying a large volume of air through the two main diffusers (secondary air supply members) as compared to the carry beam slots, as taught by Hirsch, in order to provide a volume that is adequate to condition the space being served (e.g., to maintain a certain minimum air change rate in the space).

Nillson, as modified by Hirsch, does not disclose expressly that the two elongated slots having converging axes of depth. However, It has been held that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation". See MPEP § 2144.05(II)(A) (quoting *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). However, it has further been held that "[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which

achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. Refer to MPEP § 2144.05(II)(B) (quoting *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In this case, Nillson discloses that the angular orientation of the longitudinal slits (11) can be varied. Refer to Nillson, column 4, lines 36-38. Another relevant prior art reference, Gustavsson (US 4,131,059) teaches an apparatus for forming and controlling air currents, which has two elongated slots (5) with converging axes of depth. Refer to Gustavsson, Figures 2-3; column 1, lines 6-8; and column 4, lines 47-52. Moreover, the angular orientation of the air slots is a result-effective variable because it determines the airflow pattern within the conditioned space. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the two elongated slots with converging axes of depth because the selection of this particular angular orientation of the air slots merely constitutes the optimization of a design parameter which fails to patentably distinguish claim 23 in this application over the clean air supply system of Nillson, as modified by Hirsch.

17. Claim 24 of this application also is obvious when Nillson is viewed in light of Hirsch. With respect to this claim, Nillson further discloses providing the first flow of air by forcing air through two elongated slots (two longitudinal slits 11 as depicted in Fig. 4) and providing the second flow of air by forcing air through a perforated sheet of metal or similar material (secondary air supply members 12, 13 comprising two large, perforated sheets). Refer to Nillson, Figures 1-2 and 4.

However, claim 24 of this application further discloses that the first flow of air is forced in a direction parallel to a vertical plane parallel to a side of the bed and that the perforated sheet

of metal has a hole content of approximately 30 %. Nillson, as modified by Hirsch, does not contain these additional limitations.

Although, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to orient the elongated slots in a direction that is parallel to the head-to-foot direction of the bed in order to adequately ventilate a patient lying in the bed because the applicant has not disclosed that this particular orientation of the elongated slots provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the applicant's invention to perform equally well with the longitudinal direction of the slots oriented parallel to the transverse direction of the bed as disclosed by Nillson because this slot orientation is also capable of adequately ventilating a patient while lying in the bed. See Nillson, Figures 2 and 4.

Moreover, Nillson, as modified by Hirsch, does not disclose expressly that perforated sheet diffuser has a hole content of approximately 30 %. However, It has been held that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation". See MPEP § 2144.05(II)(A) (quoting *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). However, it has further been held that "[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. Refer to MPEP § 2144.05(II)(B) (quoting *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).). In this case, Nillson discloses that the size of the holes provided in the secondary air supply member (12) and (13) can be varied in order to change the air

distribution pattern within the space. Refer to Nillson, column 6, lines 16-19. Another relevant prior art reference, Sodec (US 5,054,379) teaches an air release box for supplying clean air to a room, which has wall sections made of sheet metal and apertures (12) that preferably occupy 20% to 30% of the total wall area. Refer to Sodec, Figure 3 and column 3, lines 48-53. Consequently, it is evident that the perforation percentage of the large sheet diffuser is a result-effective variable. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a hole content of approximately 30 % for the perforated sheet diffuser because the selection of this particular perforation percentage merely constitutes the optimization of a design parameter which fails to patentably distinguish claim 24 in this application over the clean air supply system of Nillson, as modified by Hirsch.

18. **Claims 21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nillson (US 4,781,108) in view of Truhan (US 3,511,162). These two references, when considered together, teach all of the elements recited in **claims 21 and 22** of this application, except for providing a slot width of approximately 2 mm (claim 22). However, the selection of a particular numerical value for the slot width merely constitutes the optimization of a design parameter.

19. In particular, claim 21 of this application is obvious when Nillson is viewed in light of Truhan. As described above, Nillson discloses all the elements of the base claims upon which claim 21 depends. However, claim 21 of this application further discloses that each slot is provided with a depth that is substantially larger than its width. Nillson does not contain this additional limitation. Truhan, although, teaches an overhead air supply plenum (16) for conditioning a patient zone having two air slots (air directing structures 30 and 31), wherein each slot (30 and 31) has a depth that is substantially larger than its width for the purpose of providing

a discharge nozzle-type arrangement that is capable of accelerating the air with the body of slot such that it may be discharged to the space at a higher velocity. Refer to Truhan, Figure 3; column 3, lines 42-52; and column 7, lines 18-23. Therefore, when Nillson is viewed in light of Truhan, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson by forming each of the slots in the central supply member with a slot depth that is substantially larger than the slot width, as taught by Truhan, in order to provide a discharge nozzle-type arrangement that is capable of accelerating the air with the body of slot such that it may be discharged to the space at a higher velocity.

20. Claim 22 of this application is also obvious when Nillson is viewed in light of Truhan. As described above, Nillson, as modified by Truhan, discloses all the elements of claim 21, the claim upon which this claim depends. Claim 22 of this application further discloses that the width of the slot is approximately 2 mm. Nillson, as modified by Truhan, does not teach a specific slot width. However, it has been held that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation". See MPEP § 2144.05(II)(A) (quoting *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). However, it has further been held that "[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. Refer to MPEP § 2144.05(II)(B) (quoting *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In this case, Nillson graphically depicts longitudinal slots (slit 11) having a narrow slot width. Refer to Nillson, Figures 2 and 4.

Another relevant prior art reference, Lindestrom (US 3,726,203), teaches an air supply device, for the maintenance of a dust-free, bacteria-free zone in a room, which includes a slot having width of 2 mm. See Lindestrom, column 1, lines 4-5 and 39-51. Moreover, Truhan teaches that the two air slots (air directing structures 30 and 31) of the overhead air supply plenum (16) have a variable slot width (the width of air directing structures 30, 31 can be varied by adjusting support screws 37, 38 and pivoting plates 33, 34) so that velocity of the air discharged from the two slots can be regulated. Refer to Truhan, column 3, lines 48-56. Thus, slot width is a result-effective variable. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a slot width of approximately 2 mm because the selection of this particular dimension merely constitutes the optimization of a design parameter which fails to patentably distinguish claim 22 in this application over the clean air supply system of Nillson, as modified by Truhan.

21. **Claims 8-10 and 12-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nillson (US 4,781,108) in view of Hirsch (DE 28 51 046 A1), and further in view of Truhan (US 3,511,162). These three references, when considered together, teach all of the elements recited in **claims 8-10 and 12-15** of this application, except for several obvious optimized design parameters and obvious design choices.

22. In particular, claim 8 of this application is obvious when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan. As described above, Nillson, as modified by Hirsch, discloses all the elements of the base claims upon which claim 8 depends. However, claim 8 of this application further discloses that the diffuser slots are adjustable sideways to enable setting the direction of the airstream. Nillson, as modified by Hirsch, does not contain

this additional limitation. Truhan, although, teaches an overhead air supply plenum (16) for conditioning a patient zone having two air slots (air directing structures 30 and 31), wherein a pair of depending brackets (35) and (36) that support adjusting screws (37) and (38), respectively, which may be turned to adjust the pivotal location of plates (33) and (34) and the space between the plates for the purpose of permitting the airstream to be directed directly towards a particular zone within the room (e.g., the patient zone) so as to ensure that zone is properly ventilated. Refer to Truhan, Figure 3 and column 3, lines 48-52. Therefore, when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson in view of Hirsch by providing diffuser slots that are adjustable sideways, as taught by Truhan, in order to permit the airstream to be directed directly towards a particular zone within the room (e.g., the patient zone) so as to ensure that zone is properly ventilated.

23. In particular, claim 9 of this application is obvious when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan. As described above, Nillson, as modified by Hirsch, teaches all the elements of the base claims upon which claim 9 depends. With respect this claim, Nillson further discloses that each slot (longitudinal slit 11) has a certain length, width, and depth. Refer to Nillson, Figures 2 and 4. However, claim 9 of this application further discloses that each slot is provided with a depth that is substantially larger than its width. Nillson, as modified by Hirsch, does not contain this additional limitation. Truhan, although, teaches an overhead air supply plenum (16) for conditioning a patient zone having two air slots (air directing structures 30 and 31), wherein each slot (30 and 31) has a depth that is substantially

larger than its width for the purpose of providing a discharge nozzle-type arrangement that is capable of accelerating the air with the body of slot such that it may be discharged to the space at a higher velocity. Refer to Truhan, Figure 3; column 3, lines 42-52; and column 7, lines 18-23. Therefore, when Nillson is viewed in light of Truhan, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson by forming the each of the slots in the central supply member with a slot depth that is substantially larger than the slot width, as taught by Truhan, in order to provide a discharge nozzle-type arrangement that is capable of accelerating the air with the body of slot such that it may be discharged to the space at a higher velocity.

24. Claim 10 of this application further discloses that the depth of the slot is ten to twenty times the width. Nillson, as modified by Hirsch and Truhan, does not explicitly disclose this limitation. However, it has been held that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation". See MPEP § 2144.05(II)(A) (quoting *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). However, it has further been held that "[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. Refer to MPEP § 2144.05(II)(B) (quoting *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). As described above, the Truhan reference depicts a slot depth substantially larger than the width, but does not expressly specify that this depth is ten to twenty times the width. Refer to Truhan, Figure 3. Although, this limitation is a result-effective variable because a slot with a depth, which is ten to twenty times the width,

behaves as a nozzle and accelerates the flow of the fluid contained therein. See Wikipedia Online Encyclopedia (http://en.wikipedia.org/wiki/Nozzle) (accessed 8/20/2007) for the basic principles of fluid mechanics associated with a nozzle. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize this particular depth-to-width ratio for the slot in Truhan because it simply constitutes the optimization of a design parameter which fails to patentably distinguish claim 10 in this application over Truhan, as modified by Hirsch and Truhan.

25. In regard to claim 12, Nillson further discloses that an angle (GAMMA) is formed between the depth axes of each slot (slits 11), and the angle (GAMMA) is acute (as best shown in Fig. 2, the depth axes of the slits 11 are parallel to one another and consequently, the depth axes of slits 11 have an acute angle of zero between them). Refer to Nillson, Figure 2. Therefore, Nillson in view of Hirsch, and further in view of Truhan, also meets the language of this claim.

26. Claim 13 of this application is also obvious when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan. This claim further discloses that the angle (GAMMA) between the depth axes is arranged to be adjustable. Nillson, as modified by Hirsch, does not contain this additional limitation. Truhan, although, teaches an overhead air supply plenum (16) for conditioning a patient zone having two air slots (air directing structures 30 and 31), wherein a pair of depending brackets (35) and (36) that support adjusting screws (37) and (38), respectively, which may be turned to adjust the angle between the depth axes of plates (33) and (34) and the space between the plates for the purpose of permitting the airstream to be directed directly towards a particular zone within the room (e.g., the patient zone) so as to ensure that

zone is properly ventilated. Refer to Truhan, Figure 3 and column 3, lines 48-52. Therefore, when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson in view of Hirsch by providing diffuser slots that have rotatable depth axes, as taught by Truhan, in order to permit the airstream to be directed directly towards a particular zone within the room (e.g., the patient zone) so as to ensure that zone is properly ventilated.

27. Claim 14 of this application is also obvious when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan. This claim further discloses that the angle (GAMMA) between the depth axes is arranged to be 10 degrees. Nillson, as modified by Hirsch, does not contain this additional limitation. Truhan, although, teaches that, by utilizing the adjusting means described above for claim 13, it is possible to direct air out of the slots "at any desired angle within certain limits", including angle of 10 degrees between the slot depth axes, for the purpose of permitting the airstream to be directed directly towards a particular zone within the room (e.g., the patient zone) so as to ensure that zone is properly ventilated. See Truhan, Figure 3 and column 3, lines 52-56. Therefore, when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson in view of Hirsch by providing diffuser slots that have rotatable depth axes that are capable of being set to 10 degree angle therebetween, as taught by Truhan, in order to permit the airstream to be directed directly towards a particular zone within the room (e.g., the patient zone) so as to ensure that zone is properly ventilated.

28. Claim 15 of this application is also obvious when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan. This claim further discloses that the air supply unit comprises light tubes and corresponding reflectors for providing adequate lighting to a bed area of the room. Nillson, as modified by Hirsch, does not contain this additional limitation. Truhan, although, teaches an overhead air supply plenum (16) for conditioning a patient zone having two air slots (air directing structures 30 and 31) and a pair of fluorescent light housings (26) and (27), presumably, with a reflective interior housing, and containing light tubes (28) and (29) therein, capable of supplying light to the patient zone for the purpose of making efficient use of the ceiling space by providing a combined ceiling and light diffuser. Refer to Truhan, Figure 3 and column 3, lines 39-42. Therefore, when Nillson is viewed in light of Hirsch, and further viewed in light of Truhan, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clean air supply system of Nillson in view of Hirsch by providing integral light tubes and reflectors in the air supply unit, as taught by Truhan, in order to make efficient use of the ceiling space by providing a combined ceiling and light diffuser.

Allowable Subject Matter

29. **Claims 11 and 25** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

30. Applicant's arguments with respect to claims 1-3, 6-16, 18, 19, and 21-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

31. See attached form PTO-892 for additional pertinent prior art, which was not directly relied upon in this action.

32. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick F. O'Reilly III whose telephone number is (571) 272-3424. The examiner can normally be reached on Monday through Friday, 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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